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**FOREIGN MILITARY SALES: SHAPING FOREIGN POLICY AND
ENHANCING THE INDUSTRIAL BASE**

BY

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USAWC STRATEGY RESEARCH PROJECT

Foreign Military Sales: Shaping Foreign Policy and Enhancing the Industrial Base

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ABSTRACT

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The Foreign Military Sales (FMS) program, a Defense Department operation that manages sales of defense equipment as well as services and training to allied governments, is becoming a source of increasing dissatisfaction for the U.S. defense industry and government customers trying to buy and sell weapon systems. From 1986 to 1989, the United States sold \$29.1 billion of weaponry to developing countries through the FMS and general direct arms sales. During the following four years, which coincided with the end of the Cold War, the U.S. nearly doubled new sales agreements. A combination of factors is driving this aggressive campaign. The need to use FMS and direct arms sales as a National Strategy Shaper has been the focus in the past. However, economic imperatives, principally the desire to maintain the current arms industrial base is a major driver in acquisition decisions. In addition, FMS /arms sales is used as a vehicle to increase quantities, ultimately reducing the overall unit cost of critical weapon systems. This has slowly become the FMS and general arms sales emphasis. The overall goal of this paper is to examine the current FMS/arms sales policy and propose a way of balancing FMS/arms sales as a "strategy shaper" and acquisition multiplier.

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FOREIGN MILITARY SALES: SHAPING FOREIGN POLICY AND ENHANCING THE INDUSTRIAL BASE

If you lose Foreign Military Sales today, you lose the financial resources to develop technology for tomorrow, and over time the U.S. would lose its lead in several industries, whether it's commercial satellites, computers, encryption or electronics, that in turn means that you not only lose jobs from current sales, but even more future sales as the technological edge moves to other countries.¹

Arms sales which includes Foreign Military Sales (FMS) have become, in recent years, an increasingly crucial issue in international affairs.² Foreign Military Sales serve several of U.S. strategic interests. Strategists regarded U.S. foreign and security interests similarly during the Cold War years, but there was tension between those interests and commercial interests. In the last decade, however, that model has dramatically changed. Increasingly, foreign-policy rationales for U.S. arms sales have been accompanied by economic appeals: "We have to keep selling weapons overseas in order to keep American assembly lines running, to preserve our industrial base, and to lower the unit costs of new weapon systems".³

Can the FMS program accommodate both national strategic policy-shaping missions while simultaneously enhancing the fragile U.S. industrial base, threatened by reduced military spending? This study addresses these complex questions by examining the intent of FMS, current U.S. policy, and the status of the Military Industrial Base. It concludes with several recommendations.

The United States has a wide range of tools available to shape the international environment, such as diplomacy, international assistance programs, and arms control programs. Through effective shaping of this international environment, we may well reduce the threats and crisis to which the United States may have to respond. Security assistance, specifically Foreign Military Sales, is identified in the National Security Strategy as a means of implementing that strategy to accomplish U.S. strategic goals.

Arms sales must be seen in the context of North-South issues. They facilitate redistribution of power and, in certain cases, may have greater influence than that of some other instruments. Certainly withholding or granting arms can have a great political and psychological impact on certain countries. Foreign military sales are also a means of transferring technology. An increasing number of states are not so interested in the weapons fresh out of the crate as they are in the technology that will enable them to build or "co-produce" them at home.⁴

During the Cold War, security assistance programs were tailored to contain the Soviet Union.⁵ The importance of a large military build-up of U.S. forces and the need to support and

win allies abroad created what has been known as the military-industrial complex. A strong military-industrial complex was regarded as vital to our national security, enabling the United States to contain the massive force of the Cold War Soviet Union.

The end of the Cold War prompted the beginning of a massive downsizing of the United States military. Demand for defense products in the 1990s could not sustain the size and scope of the Cold War defense industry.⁶ With the exception of the Gulf War, which put a temporary hold on this deliberate “right-sizing”, the U.S. military began efforts to reduce the military by 25 percent. In fact, downsizing of force structure and personnel continued during the Gulf War.

Contractors and corporations who were primarily in favor of supporting the industrial complex were faced with shrinking revenue and profits as Department of Defense (DOD) procurement in both research/development and production declined.⁷ The DOD became concerned about the potential for negative impacts on future readiness resulting from reduced defense spending and the corresponding contraction of the industrial base. A major concern then, even greater now, is what impacts the contraction would have on the industrial complex’s ability to respond to future needs. As a result, the U.S. defense industry has aggressively sought buyers for U.S. arms overseas, lobbying the government for assistance in entering foreign markets.

A combination of factors continues to drive these aggressive exports of U.S. arms. Lingering Cold War strategic rationales for arms sales—the need to “maintain influence,” to “reward” allies, and to maintain basing -- still play an important role. Economic imperatives – principally the desire to maintain as much of the current arms industrial base as possible-- have clearly taken on greater importance in United States’ arms sales decision making.⁸

Likewise, robust FMS serve to reduce the unit cost and offset research and development (R & D) expenses of weapon systems earmarked for U.S. Forces. For example, the Army is making radical changes in its acquisition strategy for major weapon systems, using FMS approaches to reduce costs and risks. As the Army undergoes the largest change in its history, it will depend heavily on FMS to make this transformation affordable. The major focus of the Army’s transformation is to transition to a strategically responsive force that is dominant across the full spectrum of operations. Strategic responsiveness means deploying a brigade anywhere in the world in 96 hours, a division in 120 hours, and five divisions in 30 days. The major challenge now for material developers is that all future systems must weigh less than 20 tons and be able to fit on a C-130 aircraft. The second challenge is to provide the Army with the lethality and survivability essential to battle space dominance.⁹

While the tenets of Army Transformation include commonality of systems, the Army will not have the flexibility to modify existing systems without enormous fiscal outlays. System developers will have to look increasingly to FMS for leverage, to provide projected sales that will reduce unit costs and offset the enormous anticipated R & D expense. FMS can also rectify the interoperability issues facing combined forces fighting in a truly joint environment.

Co-development programs, such as the Medium Extended Air Defense System (MEADS) program, are hastening to FMS reform. The MEADS program is drawing technology from several programs (such as incorporating the Patriot PAC-3 interceptor as the initial missile) and is attempting to use common components and technology from other countries to reduce cost and development time.¹⁰ DOD reasons, if we sell U.S. systems to foreign countries, and if they are allies, then the U.S. could fight along side them in the future, and some of the systems will protect U.S. forces. Such efforts to provide interoperability and commonality can also be a major logistical enhancement in the Army transformation effort by reducing the logistical footprint.

HISTORICAL PERSPECTIVE

Two major events characterized the global conventional weapons markets in the 1990s: the end of the Cold War and decline of the former Eastern Bloc, and Iraq's invasion of Kuwait and the ensuing Gulf War. But to understand the role of FMS today, we should first look at the origins of arms sales during early parts of the 20th Century. In 1924, the League of Nations made the first significant attempt to catalog the scope of international arms trade when it voted to compile and publish statistics on arms sales. Subsequently, the "Statistical Year Book of the League of Nations" was published between 1925 and 1938. While a noble first attempt, the data proved to be incomplete, failed to establish common criteria, and did not include all weapons.¹¹ From the late 1940s through the 1980s, there were numerous similar attempts by the United Nations, as well as individual and groups of nations, to document and control conventional arms transfers and sales of weapons.¹²

Beginning in 1949, the Committee for Multilateral Export Controls (CoCom) was created to control arms sales. Eventually composed of the NATO countries (minus Iceland), plus Australia and Japan, CoCom restricted the supply of key technology and commodities to Cold War adversaries. They agreed to national controls on goods and technologies contained in three commodity lists. With the break -up of the Soviet Union and Warsaw Pact, CoCom dissolved in March 1994.¹³ After the Gulf War, the Permanent Members of the UN Security Council (P5) established UN guidelines for Conventional Arms Transfers and agreed to apply the guidelines in arms export decisions. China withdrew support for the guidelines in October 1992 after the

U.S. sold F-16s to Taiwan. There was also a similar G7 (France, US, Britain, Germany, Japan, Italy, Canada) Declaration on Conventional Arms Transfer in July 1991.¹⁴

The UN Conventional Arms Register was initiated in July 1991 as a universal and nondiscriminatory registry of conventional arms, to include arms transfers. It includes different categories of weapons. But participation is voluntary, and there is no enforcement mechanism.¹⁵ The Wassenaar Arrangement on Export Controls for Conventional Arms and Dual-Use Goods and Technologies essentially replaced CoCom. Thirty-three states (including the P5 minus China, but no Middle Eastern countries) agreed in July 1996 to promote transparency and accept responsibility in transfers of conventional arms and dual-use technologies.¹⁶

WORLD ARMS MARKET IN THE 1990S

The end of the Cold War has shaped the global arms market of the 1990s, making the market less political and more commercialized. As the Cold War drew to a close, military spending around the world declined dramatically, contracting domestic and global demands for military equipment -- yielding a smaller, more diverse and competitive arms market. As arms supplies increased, companies struggled for market share. According to the Arms Control and Disarmament Agency (ACDA), between 1987 and 1993 there was a 70 percent decrease in the market, from \$74 billion to \$22 billion. Developing countries accounted for nearly 80 percent of the market in 1993, for a total of \$17.8 billion.¹⁷

Middle Eastern countries accounted for 43 percent of world arms sales in 1993. Saudi Arabia was at the top of ACDA's list of importers, purchasing \$5.1 billion in 1993. The next largest buyer was Egypt. In fact, the United States recently offered Egypt a \$3 billion arms package, including 24 F-16s, 200 M1A1 tanks, and the Patriot air defense system.

By the mid-1990s, the US already accounted for about 50 percent of arms exports and was forecast to maintain or surpass that percentage through the year 2000. The United Kingdom was next with approximately 20 percent, then Russia with around 10 percent. UN P5 countries accounted for 86 percent of the market share in 1993.¹⁸

There have been many significant arms sales during this decade. South Korea purchased nearly 100 F-15s through several sales. Taiwan purchased 150 F-16s, and 60 Mirage 2000-5s were sold to Kuwait.¹⁹ Egypt received 46 F-16s in 1991. Blackhawk Helicopters have also recently been sold to Columbia. Clearly, the United States has been supplying the global market with hundreds of billions of dollars worth of big-ticket, hi-tech weaponry. In the 1990s, FMS became a truly big business for the United States. But other countries are now vying for this export market.

ARMS EXPORT COMPETITION

Israel, Japan, South Korea, and Taiwan are all building advanced fighter aircraft of their own, seeking to export them one day themselves. No doubt, by supplying components and manufacturing technologies to these friendly, aligned nations, the U.S. has provided them with the capability to produce these new fighters domestically.²⁰

Russia has vied with the U.S. to be the world's largest arms exporter. Since the Soviet breakup, its 1700 military enterprises have fallen into decline. Many of these enterprises depend on foreign military sales. Without investment in critical research and development, Russia is unlikely to regain its former prominence in the military sales market.²¹ Despite its decline, Russia earned \$3.7 billion from arms sales in 2000, up 10 percent from 1999.

Major attempts by Russian leadership to revive their previously robust arms industry have resulted in an overhaul of the system. In 2000, Russia merged two main export agencies into a single entity that reports directly to the Kremlin. This was a major improvement, since the two agencies were previously in competition with each other for orders. This competition had a severely negative impact on service, resulting in clients complaining that parts took as long as six months to arrive.²² Even so, China purchased 40 MiG-29s, 36 SU-24s, and 400 T-72 tanks from Russia in the early 1990s. Likewise, Iran received two Kilo class subs, fourteen MiG-29s, and 12 Su-27s in the early 1990s. Recently, Russian officials discussed possible new arms deals with China, including the sale of up to five planes designed for early-warning (AEW) missions. China will also receive upgraded versions of the Beriev A-50 plane, referred to as "mainstay" by NATO, which will permit China to simultaneously track scores, and perhaps hundreds, of targets as far as 400 kilometers away, while directing some 10-30 Chinese aircraft. Defense analysts believe that this purchase, coupled with recent refueling capabilities, could be a "significant force multiplier for China's air forces."²³

Russia still maintains four of the largest defense companies in the world. Rosvoorouzhenie, a state- owned arms export agency, ranked twelfth in the top 100 defense companies; AVPK, a defense aircraft firm ranked 39th; Sevemaya Verf, a defense ship and submarine company, ranked 78th; and Concern Antei, a defense electronics company, ranked 91st.²⁴ Russia has become a major competitor in the Asia region, selling MIG-29s and manufacturing technology to China. With the sale of MIG-29s to Malaysia (at 40 percent less than comparable Western models), Thailand, Indonesia, and the Philippines may start to look towards Moscow for aircraft.²⁵

According to some experts, Russia's weapons trade is influencing foreign policy. Russia's defense establishment is still dominated by men reared in Cold War enmity; the

competition for sales has reinforced the notion that America is an unfriendly rival whose success comes at Russia's expense, particularly since NATO has expanded its membership and, hence, its arms clientele into the former Soviet bastion of Central Europe.²⁶

In Europe, National Champions consolidated two large defense companies - BAE Systems and EADS (European Aeronautic Defense and Space Company). Together, they account for some 70 percent of the prime level contract business in Europe. There are very few competitors in Europe today, and often only one dominant one in key sectors, such as missiles, aircraft, and space. Formerly, BAE was the third largest defense industry in the world, and EADS was sixth.²⁷

The consolidation issues that both the U.S. and countries abroad are encountering pose two significant challenges. First, in this time of industrial consolidation, will there be sufficient competition to ensure both the affordability and innovation needed to provide the best and most cost-effective weaponry needed for the 21st Century warrior? While in most sectors of the U.S. military-industrial base, there remain two or more capable competitors, there is considerable concern about how long this competition will last. Since globalization will be the technological system multiplier for major U.S. acquisition programs, Europe's consolidation has put competition in serious risk.²⁸ While mergers have occurred, actual rationalization of the defense industrial base, outright shrinkage, and efficiencies have lagged. In Europe, nationalist tendencies, concerns over employment, different legal structures and cultures, and the principle of just returns make rationalizing across national lines that much more difficult.

The DOD answer to the changing landscape of industrial base consolidation is to enhance competition by establishing industrial linkages between U.S. defense firms and those located in coalition partner countries. The central premise of this approach is that sharing more technology and enhancing industrial cooperation with our allies, while maintaining security vis-à-vis third parties, will improve interoperability and encourage foreign firms to close their technological gaps with the U.S. In addition, industrial linkages can help to promote trans-Atlantic competition and keep markets open on both sides of the Atlantic as industries consolidate and rationalize assets.²⁹

While the concept of industrial linkage with coalition partners, especially in the defense industry sounds good, there have been countervailing developments in Europe. These include a series of insular actions by European governments (including commitments to large and expensive new, Europe-only, defense and industrial projects) that suggest the emergence of a "fortress" mentality, where defense procurement decisions are based more on politics rather than on "best value".

Further, there is a broad trend towards sophisticated indigenous arms production in many developing countries, such as Taiwan's Indigenous Defense Fighter, which competes with US exports.³⁰ Competition between established exporters also exists. Brazil has a 15 –year plan to purchase at least 70 fighters, and Chile wants to purchase 24 attack planes. British, French, and Russian companies are expected to strongly pursue these opportunities. U.S. industry officials estimate they will be blocked out of that market for 20 years if they fail to win these competitive sales.³¹ Again this loss of sales would adversely affect the U.S. defense industry.

Another example of how politics affects FMS occurred when Malaysia was about to purchase Russian MIG-29 fighters. The Clinton administration stepped in and persuaded them to buy some F/A-18s also. Likewise, when Greece was about to purchase electronic warfare equipment from Britain, again the U.S. administration stepped in to help secure a deal for Litton Industries instead.³²

Foreign Military Trade Policy

The U.S. has a long tradition of ambivalence in its policies toward trade in conventional arms, as evidenced by the coexistence of policies that promote US arms exports and periodic initiatives to restrain such exports. President Clinton's Policy on the Transfer of Conventional Arms was issued in February 1995 after a two-year policy review. The policy was virtually a continuation of the policies developed by the administrations of Presidents Reagan and Bush, implemented over the last two decades. The policy supports transfers meeting the continuing security needs of the U.S. and our allies, while it restrains arms transfers that may be destabilizing or a threat to regional security.

In addition, it is important to note that Congress cannot make U.S. policy on arms transfers. This responsibility falls on the Executive Branch since the President as Commander-in-Chief exercises authority over this security issue. However, congress has assumed the right to make individual arms transfers subject to its disapproval, rather than the right to approve sales to foreign countries before they are completed. The President and his adviser's use this power of rejection, which requires concurrent resolution, sparingly because it inevitably involves judgments on foreign policy that can best, be made. Given so, Congress has sought to make certain that arms transfers are subject to close scrutiny on Capitol Hill and has accordingly put the Executive Branch on notice that prospective sales must be justifiable.³³

One of the goals of current U.S. policy is to enhance U.S. defense industry's capabilities to meet defense requirements at a lower cost. The policy thus directs senior government

officials to promote sales of U.S. weaponry. In fact, U.S. embassies have increased support to US defense companies. And the State Department has created a Center for Defense Trade to promote US arms exports. The Clinton administration directed embassies around the world to actively promote military sales.

Numerous issues impact U.S. policies involving arms sales. Many of these issues are at odds with one another. Politics permeates every decision an administration makes, and the politics can impact domestic (economic) and international situations simultaneously.

Every administration has to deal with Congress when attempting arms sales. For instance, in 1994 the Clinton administration proposed the transfer of F-16s to Pakistan as an inducement to curb its development of nuclear weapons. But a 1985 law, the Pressler Amendment, prohibited such sales to Pakistan because of its nuclear program.

More recently, the most controversial FMS case in decades was the decision to sell advance warplanes to Chile. The Chilean arms sales provide a case study that raises several issues related to arms transfers and the U.S. policy to manage this valuable strategic tool appropriately. The Chilean air force decided to buy 10 C/D F-16s at a cost of approximately \$600 million dollars to replace its aging fleet of French Mirages and F-15 jets, which date from the 1960s. The F-16s, which are produced by Lockheed Martin, were selected over aircraft produced by France, Sweden, and McDonnell-Douglas. The Chileans had asked that the F-16 be equipped with the latest generation AMRAAM missile system. The AMRAAM missile system, one of the most sophisticated systems in the U.S. weapon portfolio, allows pilots to track and shoot targets that are over the horizon.³⁴

The U.S. agreed to the F-16 sale, but declined delivery of the AMRAAM system. U.S. global policy prohibits the introduction of new technologies in any region where the weapons could upset the existing balance of power. This policy was adopted under the Carter administration when a specific ban on advance weapon sales was imposed on Latin American countries ruled by military dictators at the time. This ban has been considered a major reason why South America spent less on arms than any other region over the past two decades.³⁵

Even without the AMRAAMS missiles, the sale of the most advanced F-16s to Chile risks setting off an arms race in the Southern Cone. While tensions in the region are more relaxed than they were when Chile first invited bids in 1997, the military in Argentina, Bolivia, and Peru are certain to press for new weapons to counter the potential new threat. There was no strategic rationale behind this sale other than to keep the Chilean military happy. Since the sale served no strategic end, it can be justified only as an effort to sustain the U.S. defense industrial base. Now that newer technology has been introduced in the region,

neighboring countries will feel compelled to move in the same direction, either because they feel a threat or as a matter of prestige. Either way, U.S. firms will realize additional sales.

Since the F-16 entered into production in the late 1970s more than 4,285 have been built or are on order, of which more than 2000 have been delivered to the U.S. Air force. The remaining aircraft have been exported to serve in the air forces of twenty nations. Last year, the United Arab Emirates completed a deal for eighty of the most advanced F-16s, valued at \$ 6 billion dollars.³⁶

Altogether, the orders boosted Lockheed Martin's F-16 backlog to 263, thereby ensuring production of the world's most popular dual-role export fighter through the end of the decade. The orders will allow the company to continue funding development of the jet to keep it current, at the same time reducing the unit cost through higher production runs.³⁷

Arms sales can promote a favorable regional balance of power. Arms transfer decisions based on traditional criteria of geographic characteristics, economic capability, or military potential in maintaining the balance of power also have to include considerations of image, prestige, and ideological beliefs. Taiwan, for example, has been an American ally during the Cold War and has been surfing successfully the third wave of democratization since the 1980s. It is difficult for the U.S to abandon completely its obligation to Taiwan's defense against China's threat. Arms sales to Taiwan, unlike Chile, add to U.S. credibility in defending a free institution in the world. At the same time, these sales cause on-going tensions between the United States and China, which strongly resents U.S. intrusion in its interest in Taiwan.

Arms sales to Taiwan will effectively support several national strategy interests. The U.S. sells weapons to Taiwan to hold China in check, to ensure profits for U.S. defense manufacturers, and to promulgate U.S. democratic values and security interests. It is absolutely critical that every administration weigh U.S. domestic interests and external structural changes to maintain the delicate balance of these seemingly contradictory considerations.³⁸

Suspension of deliveries through the Foreign Military Sales program, a political decision, is common in response to border conflicts, such as those between Ecuador and Peru in the mid-1990s. Obviously these political considerations have both domestic, economic, and regional stability implications.

Another key area addressed by the Clinton administration was the management of Export Controls. A major challenge in this area was to remove impediments to defense industrial globalization and technology sharing with U.S. allies posed by antiquated, Cold War U.S. export controls, while at the same time ensuring that globalization does not lead to least common denominator approaches on security.³⁹ Critics of the re-engineered FMS program

warn that loosening controls (even among allies) could promote the spread of potentially dangerous military technology around the globe.

An example of poor export controls surfaced in events pertaining to Canada in 1999. Canada was the only country that had been granted special exemptions from military export control, but those exemptions were suspended in 1999 because Canada retransferred certain technology to China and Iran.⁴⁰

The process of reviewing applications for selling weapons overseas has become so inefficient that it has damaged relations between allies and discourages foreign countries from doing business with American firms. For instance, if an American company sells a tank to Britain, approval must be gained through a U.S. government licensing procedure that in 1999 took an average of 89 days to complete. If the clutch of that same tank becomes inoperable, Britain has to get an import license to send it back to the U.S. for repairs. Then the U.S. company would have to get another export license to return the clutch to Britain.⁴¹ Clearly, the bureaucracy involved in monitoring FMS hampers U.S. arms exports.

The Clinton administration was successful in streamlining the export licensing somewhat. The State Department initiated a 17-point reform plan that reduced export licensing processing time by 40 percent. The programs would allow companies to seek fewer licenses that cover more materials and stay in effect for longer periods. For example, if Britain wanted to buy an M1A2, it could get a license for the entire weapon system instead of separate licenses for the communications, infrared systems, computer target acquisition systems and technical information. Such reforms indicate that U.S. presidential administrations must offer on-going support to the military industrial base in order to expand Foreign Military Sales. Despite mounds of convincing arguments to restrict, not relax, licensing procedures, such changes are necessary to support the U.S industrial-complex.

The Industrial Base

Our future National Defense security needs can only be met by a strong industrial base to provide technologically excellent weapons and equipment at affordable prices. DOD must insure that its military has access to and benefits fully from cutting edge technologies, human capital, and a robust industrial and technology base. This is necessary to meet the nation's

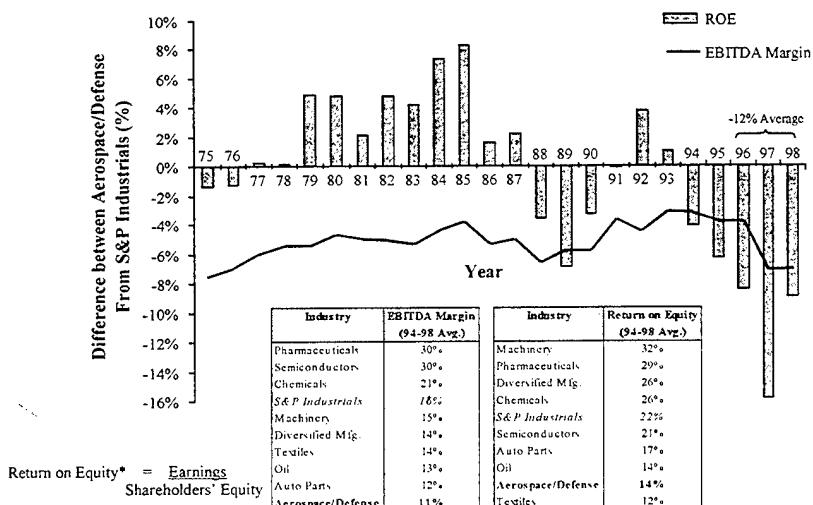
national security needs. This in turn requires a competitive defense marketplace with sound companies that are able to attract excellent technical and management talent.⁴²

However, while much of U.S. industry is booming, the defense industry has fallen into a slump so troubling that it is forcing the Pentagon and weapon makers to rethink some of their basic tenets. The end of the Cold War, coupled with over 12 years of reduced defense budgets, has forced the defense industry to feel the impact of the peace dividend. Stock prices of top defense companies are near 52-week lows, and many have lost half their values in the past year. In 1999 the Standard and Poor's Aerospace Index fell 8 percent, while the broader S&P 500 index rose 21 percent. Shares of Lockheed Martin Corp., the largest defense contractor, plummeted 48 percent in 1999. Shares of Raytheon fell 50 percent, General Dynamics' shares dropped 10 percent, and Northrop Grumman fell 30 percent. The only exception among the top defense firms was a 24 percent increase at Boeing Co., which also happens to be the largest commercial aerospace firm in the country.⁴³

Aerospace/Defense Financial Performance vs. S&P Industrials, 1975-1999



Over the past 25 years, Aerospace/Defense profit margins have been consistently low; however, ROE* appeared relatively strong until 1987.



Source: S&P, JSA Analysis

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FIGURE 1

In 1999 the combined market valuation of the top 10 defense U.S. companies was about equal to that of Proctor & Gamble by itself, or only one-fourth of the value of Microsoft Corp.⁴⁴ Despite the gloomy statistics, most Pentagon officials do not consider the current weakness of the industry a threat to national security. Defense firms' problems result from several factors, including program uncertainty and a lack of steady and adequate funding; a lack of

understanding of industry's needs and requirements on the part of the military and DoD personnel; and Wall Street's infatuation with the stocks of cutting edge "dot.com" companies to the detriment of more traditional industries.⁴⁵

Nearly a decade after the start of the defense budget reductions, firms are coping with problems typical to any consolidating industry. They must meet 21st century warfighting needs and succeed financially in a very different defense market, with fewer large defense acquisitions, shorter production runs, and more uncertainty surrounding future defense programs. Defense companies are competing with new companies for resources, including human and financial capital. The technical and management skills critical to defense are also key for new economy companies, which was not true in the past.

A robust and highly competitive defense industry, at both the prime contractor and subcontractor levels, is absolutely vital to providing DoD with the highly technical, affordable, and innovative weapon systems necessary to meet its responsibility in the 21st century. If DoD is to be successful in meeting the acquisition challenges of the 21st century, the military industrial base must meet four key requirements. First, the industrial base must design and produce next generation weapons at lower costs; second, it must preserve technological leadership; third, it must be capable of reducing cycle times to respond to evolving threats; and finally it will have to support interoperability for joint and combined operations with coalition partners.⁴⁶

As a result, we are currently witnessing extraordinary change in defense industries worldwide. The end of the Cold War resulted in a reduction of defense budgets and a resulting consolidation in the U.S. and, more recently, in European defense industries. Defense companies must be capable of competing in the international marketplace in order to support their own militaries. In the past two decades, the number of separate U.S. defense business sectors has fallen from 51 to 5.

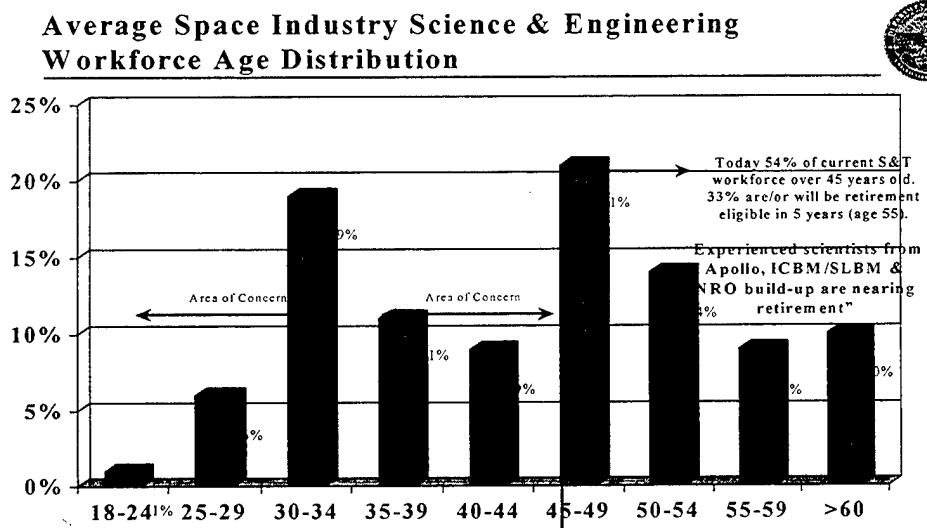
The economic impact of FMS on the U.S. economy is diverse. On a national level, exports from the international arms trade and aerospace products in 2000 accounted for over \$219 billion dollars while employing over 800,000 workers.⁴⁷ Although this number is not significant in national economic terms, FMS has a major stake in ensuring U.S. leadership in specific industries. Defense exports made up 17 percent of the aerospace industry's total overseas sales in the second quarter of 1998. Without defense exports, the U.S. leadership in the international aerospace industry would be seriously compromised.⁴⁸

A number of leading technology and industrial companies have exited the direct defense market place. They include some of the leading innovative companies in the commercial

technology and heavy industry sector, including: GTE, Hughes Electronics, IBM, Lucent, Magnavox, Phillips and Texas Instruments on the technology side; in the heavy industrial sector: Allegheny Teledyne, Chrysler, Eaton, Emerson, Ford, General Electric (except jet engines), Tenneco, and Westinghouse have jumped ship. When asked why companies are leaving the direct defense market, a senior executive of a major company stated:

The Defense industry became unattractive through a process like death by a thousand cuts. There was no one event that made their business unattractive but eventually things were screwed down so tight that it was no longer providing attractive returns. Moreover, the business no longer provided attractive cash flows and a company could no longer get cash up front for a large project. The government took all the savings from any operational improvements so that many capital investments would have had a negative return to the company had we employed the capital to achieve them.⁴⁹

The financial investment community continues to have serious concerns about the defense industry at a time when the equity market rewards growth, strong cash flow, and predictability.



Even with the enormous growth generated by massive consolidations in the mid 1990s, the financial community views this development as temporary and largely over. Equity values

FIGURE 2

are sharply down and price/earnings multiples below that of other industrial sectors, resulting in a dramatic drop in market capitalization of defense companies. Many of the major direct defense companies' bond ratings are approaching "junk level," which makes raising capital extremely difficult and expensive. In addition to the financial problems facing the defense sector, human resources continue to be a major concern. The workforce is aging and large numbers of key technical and management talent will be retiring over the next 3-5 years.

A Booz, Allen & Hamilton space study reports that one-third of the technical workforce is within five years eligibility for retirement. The next generation of senior managers (age 45-55) will come from a relatively small pool of talent now 35-45. Recruitment is difficult for both new and experienced management and technical talent. Shares of top engineering school graduates going to defense are down sharply.⁵⁰

In addition, FMS significantly contribute to maintaining vital production lines to preserve defense industrial capabilities. Production line closures can potentially result in the loss of specific technological and production capabilities. The result is a definite decrease in defense capability and readiness. Modern production lines cannot "ramp up" in short periods of time, as they did in World War II. The technological sophistication of modern weaponry prohibits the establishment, or re-establishment, of major lines of production in the short term. The time required to conduct First Article Test (FAT), qualify secondary vendors, and then produce major weapon systems like tanks is measured in decades, not years. In addition, production facilities and equipment for modern military defense weapon systems are specialized and require significant time to design and procure.⁵¹

Restarting any part of the military industrial base after a lull would impose costly burdens on the government. To minimize this, U.S. defense corporations try to keep the production lines running through exports.⁵² In this way, military readiness can be sustained. For instance, the sale of F-15s to Saudi Arabia in the early 1990s kept the production line open for three years and saved an estimated 11,000 jobs. Further, the U.S. Navy is pursuing weapons sales on behalf of U.S. shipbuilders to sustain the U.S. ship building industrial base.

Once production lines are shut down, it is very expensive to start them up again if needed. Tanks, helicopters, missiles, and fighter aircraft are the important, long lead-time lines that are now kept open through foreign sales.⁵³

However, U.S. public support to pay for weapons to even friendly nations in the form of grants eroded after the Cold War.⁵⁴ During the 1992 presidential campaign, arms industry lobbyists warned of massive layoffs if export sales of advanced weapons were stopped. During that time, a coalition of arms companies and defense industry unions circulated information and videos and lobbied Congress to gain public support for arms sales, and for their jobs.⁵⁵

Politicians have used arms sales increasingly to gain popularity and public support, especially in election years when jobs are at stake. During the U.S. presidential election in 1992, President Bush broke with a long-standing policy of no arms sales to Taiwan, and announced the sale of 150 F-16s to Taiwan. A week later, he announced the sale of 72 F-15s to Saudi Arabia. The issue was jobs:

"In these times of economic transition, I want to do everything I can to keep Americans at work."⁵⁶ When President Bush announced the sale of 150 F-15s to Taiwan, he did it under a banner reading, "Jobs for America-Thanks Mr. President."⁵⁷

As defense resources shrink, government efforts have focused on the need to support the necessary industrial and logistical infrastructure. In many cases, this is being performed by mothballing facilities for possible future use should the need arise. Most planners consider such facilities as critical if weapons need to be maintained or produced in the event of a major conflict.

As many weapon systems reach maturity or the final stage of their economic life and are placed on the shelf for future use, the corporate memory about design, inner workings, engineering change proposals, and manufacturing particulars will be lost as the civilian defense force draws down. As many as 20,000 highly trained civilian workers left the defense sector each month in the early 1990s. The decline has slowed considerably, but the exodus continues. Despite the fact that a level-three drawing package is a deliverable as part of the procurement package, much of the details are intuitive to the experienced defense practitioner.⁵⁸

The impact of closing down major defense production lines has several underlying effects. Statistics indicate that defense workers who become unemployed remain unemployed significantly longer than workers in other sectors. This can be attributed to the highly specialized skills defense workers possess. These skills cannot be easily transferred into other, non-defense related industries.

ARMS SALES PROCESS

Using the Foreign Military Sales (FMS) program, the US government sponsors conventional arms sales, administered by the Defense Security Assistance Agency (DSAA). DSAA lines up customers, negotiates the sale, collects the money (including a 3 percent administration fee), makes arrangements with the U.S. Company, and makes the transfer. Alternatively, US companies can find customers and negotiate a direct commercial sale to a foreign government or corporation. The company would then apply to the State Department for a four-year export license.⁵⁹

Besides these hurdles, exports are sometimes subject to Congressional approval. During the 102d Congress, over 50 bills were introduced that would have affected US policies on the export of arms and military technologies.

The US military services also give away excess weapons and other equipment, including ships and vehicles. These "giveaways" do not require Congressional approval. Of course, the

defense industry would prefer for nations to purchase new weapons. Russia also uses weapons transfers to repay debts.

Arms exports also help nations that the US supports to defend themselves; promotes regional stability; and fosters bilateral relations. The Middle East accounted for nearly 50 percent of arms sales over the past decade, corresponding to an increase in spending since the mid 1980s and a dramatic increase since the 1991 Gulf War and the impressive demonstration of Western weaponry.⁶⁰

Such sales to the Gulf Cooperation Council states often cause alarm for Israel and its supporters. After the announced sale of 72 F-15s to Saudi Arabia, the Israeli Air Force Chief of Staff proclaimed, "There is no question that the qualitative gap between the Saudi and Israeli air forces has decreased."⁶¹

Consistency with regional stability and foreign policy interests are criteria used to warrant arms sales, according to the President's own policy.

Domestic economic concerns are usually a short-term political consideration, especially in elections years. Even so, defense industries need to export to grow and remain profitable and competitive, to improve the balance of trade, to keep unit price down for domestic sales, and to fund research and development efforts.

After World War II, the US developed separate military and commercial/civilian industrial sectors to impede technology transfer not only to the Soviet Union, but between the sectors as well. There was "spin-off" from the military to the civil sector. But by the 1990s, the situation reversed, with commercial technologies advancing quicker than the military. Additionally, the level of sophistication requested by arms buyers has been closing the technology gap between the armaments of industrialized suppliers and the developing countries seeking these weapons.

TECHNOLOGY TRANSFER

In the next two decades, the United States will depend increasingly upon a global technology base for the product and process technologies needed for the development of future systems. This technology base will also have an extremely strong commercial orientation since civilian technologies are likely to offer their services to the highest bidder. Efforts to restrict the flow of technology across sovereign borders will be increasingly difficult. Broad base technology control regimes are likely to be futile, while control of specific military-unique technologies will become more important.⁶²

Because the U.S. will continue to base its national strategy and global position on the technological superiority of its military, it must be recognized that a world that provides all

nations with more or less equal access to defense-related technologies poses special challenges. The United States can only preserve its current technological advantage through time-based competition: the ability to rapidly develop and deploy military applications of commercial technologies.

Transfer of technology is hastening internationalization of the arms market, producing a significant, so called second-tier of producers, who benefit through transfer of manufacturing technology, sub-contracting deals, licenses, and co-production.⁶³ For example, South Korea "purchased" 120 US F-16s: 12 aircraft direct from the US, 36 as production kits prepared by the Ft. Worth plant and assembled in Korea, and 72 built by Samsung Industries in Seoul. This concept called "offset deals" has become increasingly common. Offset deals are made when foreign countries successfully demand some form of compensation, a non-monetary rebate for purchasing armaments. With competition to win major arms deals so fierce, the return regularly surpasses 100 percent of the value of the equipment purchased.⁶⁴

Technological sophistication of weaponry is increasing with more transfers to the civilian sector. For instance, integration of GPS data, IR night vision and surveillance devices, data compression, lasers for many uses, and other technology are becoming a major part of the commercial sector. Modern, information-intensive warfare depends on high technology products from the electronics, semiconductor, computing and telecommunication industries. The distinction between civil and military technology continues to blur, with the leading edge of some technologies totally on the commercial side. To counter this, the DOD implemented a policy of technology-sharing and joint development with close U.S. allies who would agree not to disseminate it further.⁶⁵

During the Clinton administration, the most important issues impacting conventional weapons proliferation policy, and more pointedly, arms sales, were certain domestic economic issues. That administration sought to do everything it could to support U.S. defense industry in exports. The trade off for this shortsighted policy is that we continually make arrangements that include technology transfers and other "offsets". Politicians always herald the sale of weapons to save jobs at home. But increasingly these sales include transferring jobs overseas in the long run.

Most arms deals now include "offsets". With offsets, arms exporters steer business to the purchasing country to help offset the cost of purchasing the equipment. This may include co-production deals, technology transfers, and investments in promoting these countries' exports in the U.S. marketplace. All this eventually results in the export of jobs and technology from the U.S., further diminishing domestic economic benefits of U.S. arms sales over the long run.

Another aspect of the cost criteria is how much will it cost the U.S. to surpass technology it has so widely exported. The Air Force has been requesting hundreds of billions of dollars to develop and build the F-22 fighter, in part to deal with the proliferation of advanced fighter aircraft such as the F-15, F-16, and F-18, some of which the military services are giving away as surplus.⁶⁶

CONCLUSION AND RECOMMENDATIONS

Arms Sales to include FMS have become in recent years a crucial dimension of international affairs. Arms sales are far more than an economic occurrence, a military relationship, or an arms control challenge---arms sales are foreign policy writ large.

Despite the challenges that the U.S. industrial base is experiencing, arms sales must be seen, essentially, in political terms. The world is undergoing a diffusion of power caused by the end of the Cold War, political, economic and military--shifting from the industrialized, developed states to the Third World and the so-called Fourth World (poor and without oil). The acquisition of conventional arms, often sophisticated and usually in far greater quantities than the recipient state previously had, is a critical element of that diffusion.

Arms sales are fraught with policy dilemmas. There is no easy answer to the question of whether FMS/Arms Sales should be used as a National Strategy shaper or acquisition enhancer to retain the fledging U.S. industrial base. There are no simple truths to guide policy makers. Even when a supplier country has adopted general policy guidelines, each weapon transfer decision will involve complex guidelines, and each weapons transfer decision will involve complex judgments and trade-offs. Long-term risk must be weighed against shorter-term benefits. The prospective economic advantages of a sale may have to be balanced against disadvantageous political or arms control consequences.

The defense industry and government are the sole source of legitimacy for the use of the arms the defense industry supplies and the main customer for its products. Therefore, the defense industry is a vital national resource for national security purposes.

Arms sales, while strengthening the domestic economy, can lead to foreign policy disasters: The Taiwanese F-16 deal so infuriated the Chinese that, they pulled out of all multilateral arms control talks and increased exports to rival U.S. countries like North Korea.⁶⁷ Obviously, this ran counter to our national interests.

Such diplomatic contingencies and the need for sophisticated equipment fast are but two aspects of the risks involved with arms sales. A lively defense industry is an essential part of the contingency planning process and obviously supports our national security interests. With long

lead times for procurement, as well as research and development, production lines cannot be restarted quickly if allowed to decay. Sufficient surge capacity is required to produce enough weapons and spares when needed. Arms exports provide the U.S. the "cushion" it needs to meet these contingencies.

As a result of advances in technology, the growing importance of upgrading through the use of components and the transfer of manufacturing/technological techniques through co-production is an imperative for the future. However, DOD must maintain the internal expertise to manage and monitor this key technological multiplier.

The criteria for arms exports practiced by the U.S. in determining whether a particular weapon, component, or technology can be exported are flexible and subject to a bureaucratic struggle between the Commerce, State, and Defense Departments, to say nothing of the Congress. We can take a balanced approach to satisfy both the Industrial Base issues while operating in concert with the national security objectives. In addition, DoD acquisition leadership must consider the impacts of its strategies early in major programs. Their decisions could well result in sharply reduced competition at both the prime and supplier levels.

The most troubling aspect of the current policy is the outright eventual export of jobs and technology. This policy will weaken the economy in the long run. Further the U.S. and allied forces may confront a variety of technologies we have exported in some future conflict.

It is important to see if the new Bush administration will adopt the previous Cold War Industrial Base mentality or develop a new global technology concept. American defense technology is the world's best, but the U.S. defense industry is in the midst of a fundamental transition that could be detrimental to this nation's overall strategy.

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